Prevalence and predictors of occupational violence and aggression towards GPs:
a cross-sectional study

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ABSTRACT

Occupational violence and aggression are common in general practice. This study examined occupational violence and aggression against GPs in terms of prevalence and predictive factors, such as sex of GP, and practice location. Over half of the GPs sampled had experienced at least one form of violence and aggression; more female than male GPs experienced sexual harassment; and there was no difference in the number of metropolitan and rural GPs who had experienced violence and aggression. Predictors emerged for verbal abuse, intimidation, physical abuse, and sexual harassment.

Keywords

aggression; general practice; occupational violence; prevalence; predictors.

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INTRODUCTION

Researchers from the UK have reported that violence and aggression towards GPs is common: 10–11% of GPs have been assaulted, 5% threatened with a weapon,[1] and 25–59% have experienced verbal abuse.[2–4] Prevalence comparisons with other occupations are difficult to make because of different definitions of violence and aggression. Nevertheless, 86% of nurses,[5] 56% of social workers,[6] and 82% of paramedics[7] have experienced some form of verbal abuse or harassment.

To date, research has focused mainly on the prevalence of occupational violence and aggression in general practice, rather than on factors that may predict violence and aggression. A notable exception is the study by Magin *et al*[8] which found that female GPs were more likely than male GPs to experience both low level violence (verbal abuse, property damage or theft, threats, or slander) and high level violence (physical abuse, sexual abuse, stalking, or sexual harassment). Having more years experience as a GP was associated with a reduction in both levels of violence. Magin *et al* excluded rural GPs from the study, which influences the generalisability of their findings.

The objective of this study was to investigate the prevalence of six forms of violence and aggression in general practice, to explore sex and practice location differences, and to determine predictors of violence and aggression.

METHOD

A questionnaire was developed to explore GPs' experience of six forms of violence and aggression. Five forms were based on definitions developed by Tolhurst *et al*[9]: verbal abuse, property damage or theft, physical abuse, sexual harassment, and sexual assault. An additional form, intimidation, was also included. GPs were asked a variety of open- and closed-ended questions (for example, yes/no response to indicate if they had experienced violence and aggression), and were also asked to provide demographic information. The questionnaire was distributed by the Health Insurance Commission

How this fits in

Occupational violence and aggression are common in general practice in the UK and in Australia. This study has found that verbal abuse, physical abuse, intimidation, and sexual harassment can be predicted by certain factors; for example, verbal abuse was predicted by the mean number of hours in general practice per week and practice type. Interventions aimed at reducing the prevalence of occupational violence and aggression should include targeting the factors that predict violence and aggression.

(statutory authority of the government that meets health policy objectives) to 1000 randomly selected GPs across Victoria, Australia. GPs completed and returned questionnaires anonymously.

Data were analysed using SPSS (version 14.0). Sex differences and practice location differences were analysed using χ^2 test for independence or Fisher's Exact probability test where appropriate. Discriminant function analysis was used to determine which variables could best predict group membership (that is, GPs who had experienced violence and aggression versus GPs who had not).

RESULTS

In total, 216 questionnaires were returned, five of which were excluded because they were returned blank; the completion rate was 21.1%. Of the participants, 62.1% (n = 131) were male, and 34.7% (n = 79) were female. Participants' mean age was 48.2 years (standard deviation [SD] = 10.9). They worked in general practice for mean 38.1 hours per week (SD = 16.3), for a mean of 19.7 years (SD = 11.7); and spent a mean of 33.5 hours (SD = 13.1) in direct patient contact. The majority of participants (73.8%) worked in a metropolitan location (capital city or metropolitan centres), 22.7% worked in a rural location (rural or remote centres); 1% worked in more than one location, and 2% did not disclose their location.

Descriptive statistics

Overall, 57% of GPs experienced at least one form of violence and aggression in the last 12 months. Verbal abuse was the most common form experienced by GPs (44%), followed by property damage or theft (23%), and intimidation (22%). Sexual harassment was experienced by 8%, physical abuse by 3%, and sexual assault was experienced by 1% of GPs.

Because of the low response rate, and potential bias (GPs who experienced violence and aggression may have been more likely to respond than GPs who had not experienced violence and aggression), it is possible that the figures calculated above are the maximum, or upper rate, of prevalence. To account for this, prevalence figures were adjusted and calculated as a range that included the lowest possible rate of violence and aggression. The lowest possible rate was calculated by assuming that non-responders had not experienced violence and aggression, and taking into account the response rate of 21.1%. As such, the lowest possible rate is 21.1% of the upper limit. Therefore, with the adjustment, 12–57% of GPs had experienced at least one form of violence and aggression in the last 12 months. The adjusted prevalence range for each form of violence and aggression is 9–44% for verbal abuse, 5–23% for property damage or theft, 5–22% for intimidation, 2–8% for sexual harassment, 1–3% for physical abuse, and 0.2–1% for sexual assault.

Sex differences and practice location differences are presented in Table 1. The only significant sex difference was for sexual harassment with more female than male GPs having experienced sexual harassment. There was no significant difference in the number of metropolitan and rural GPs who had experienced violence and aggression.

Table 2 shows correlations between the variables of interest. There were several significant correlations, perhaps the most notable were the strong correlation between hours per week in direct patient contact and hours per week in practice; and the correlation between years in occupation and age. The correlations suggest that there is significant overlap between these variables. Based on these correlations, the variables age and hours per week in direct patient contact were dropped from multivariate analyses.

In multivariate analyses one case was identified as a multivariate outlier with $P<0.001$ and was deleted. Evaluation of assumptions of linearity, normality, multicolinearity or singularity, and homogeneity of covariance revealed no threat to multivariate analyses.

A stepwise discriminant function analysis was conducted for each form of violence and aggression, and predictors emerged for four forms. For verbal abuse, the variables 'mean hours per week in general practice' and 'practice type' loaded on a function that significantly discriminated between the two groups (Wilks' λ [degrees of freedom {df} = 2] = 0.95, P = 0.008). GPs who had experienced verbal abuse worked longer hours (mean = 39.67 hours, SD [standard deviation] = 14.35) than GPs who had not experienced verbal abuse (mean = 35.61 hours, SD = 16.60). A larger number of GPs who had experienced verbal abuse worked in group practices rather than a single-handed practice (89% versus 79%). The function correctly classified 56% of cases overall. Prediction of experience of verbal abuse was considerably more accurate (64%) than for prediction of lack of exposure to verbal abuse (50%).

A function was also generated that significantly discriminated between the groups on intimidation (Wilks' λ [df = 1] = 0.97, P = 0.015). The variable 'years in general practice' loaded significantly on the function.

GPs who had experienced intimidation had worked in general practice for fewer years (mean = 16.13, SD = 10.02) than GPs who had not experienced intimidation (mean = 21.02, SD = 12.00). The function correctly classified 58% of the cases overall, with 61% correct classification of GPs who had experienced intimidation and 57% correct classification GPs who had not experienced intimidation.

For physical abuse, mean hours per week in general practice best discriminated between the two groups and correctly classified 64% of the cases (Wilks' λ [df = 1] = 0.98, *P* = 0.031). GPs who had experienced physical abuse worked longer hours (mean = 51.0 hours, SD = 10.86) than GPs who had not experienced physical abuse (mean = 36.99 hours, SD = 15.66). This function had 71% correct classification of GPs exposed to physical abuse and 64% correct classification of GPs not exposed to physical abuse.

In terms of sexual harassment, sex was a discriminating factor between the two groups (Wilks' λ [df = 1] = 0.97, *P* = 0.03) and classified 65% of cases, with 71% correct classification of GPs who had experienced sexual harassment, and 64% correct classification of GPs who had not experienced sexual harassment. Female GPs were more likely to experience sexual harassment than male GPs.

Table 1. Number (%) of GPs experiencing each form of violence and aggression in the last 12 months, according to sex and practice location.

	n (%)			*n* (%)		
	Male	Female	*P*-value	Metropolitan	Rural	*P*-value
Verbal abuse	53 (41)	38 (49)	0.35	66 (43)	24 (51)	0.43
Property damage or theft	28 (22)	19 (24)	0.80	37 (24)	10 (21)	0.86
Intimidation	30 (23)	16 (20)	0.76	33 (21)	12 (26)	0.68
Physical abuse	5 (4)	2 (3)	0.91	4 (3)	3 (6)	0.43
Sexual harassment	5 (4)	11 (14)	0.02[a]	13 (8)	3 (6)	0.36
Sexual assault	2 (2)	0 (0)	0.52	1 (0.6)	1 (2)	0.41

[a]P<*0.05*

DISCUSSION

Summary of main findings

This study revealed that a large number of GPs experienced verbal abuse, property damage or theft, and intimidation. The only sex difference was for sexual harassment. There was no difference in the number of metropolitan and rural GPs who had experienced each form of violence and aggression. The study also revealed that certain factors predicted exposure to verbal abuse, intimidation, physical abuse, and sexual harassment. The factors that were most important differed according to the form of violence and aggression. In particular, GPs who had experienced verbal or physical abuse worked longer hours than GPs who had not experienced these forms of violence and aggression; GPs who had experienced intimidation had worked in general practice for fewer years than GPs who had not experienced intimidation; GPs who had experienced verbal abuse were more likely to work in a group practice than a single-handed practice; and female GPs were more likely to experience sexual harassment than male GPs.

In terms of predictors, Magin *et al*[8] reported that the sex of the GP was as a predictor of all forms of violence. This is in contrast to the present study which found that sex was only a predictor for sexual harassment. Magin *et al* also reported that the number of years worked in general practice was a predictor of violence: having more years' experience as a GP was associated with a reduction in all forms of violence. In the present study, number of years working as a GP (and hence level of

Table 2. Correlations between variables of interest.

	Age	Hours/week practice	Hours/week patient	Years as GP	Practice location (metropolitan versus rural)	Sex	Practice type (single versus group)	Highest qualification (bachelor versus postgraduate/fellow)
Age	–	–	–	–	–	–	–	–
Hours/week practice	0.12	–	–	–	–	–	–	–
Hours/week patient	0.12	0.88[b]	–	–	–	–	–	–
Years as GP	0.94[b]	0.11	0.09	–	–	–	–	–
Practice location (metropolitan versus rural)	–0.06	0.22[a]	0.21[b]	–0.11	–	–	–	–
Sex	–0.33[b]	–0.35[b]	–0.39[b]	–0.27[b]	–0.23[b]	–	–	–
Practice type (single versus group)	–0.34[b]	–0.12	–0.12	–0.29[b]	0.08	0.21[b]	–	–
Highest qualification (bachelor versus postgraduate/fellow)	–0.19[b]	–0.02	–0.09	–0.11	0.03	0.07	0.09	–

[a]P<*0.05*. [b]P<*0.01*

experience) emerged as a predictor of intimidation only. These differences may in part be due to methodological differences associated with definitions of the different forms of violence and aggression as well as sampling techniques. For example, Magin *et al*[8] included threats and stalking as separate forms of violence whereas, in the current study, these were included in the broader category of intimidation.

Strengths and limitations of the study

It is likely that the GPs who participated in the study had a greater than average interest in occupational violence and aggression which may have biased the results. For this reason, a prevalence range has been provided. Furthermore, the sample size and completion rate were low resulting in a need for cautious interpretations of the results. The low completion rate was not surprising as the study used a questionnaire that was particularly time consuming (nine pages) and did not offer GPs any incentive for participation. Difficulties in recruiting GPs into research is becoming increasingly well known.[10,11] Despite the low completion rate, GPs who participated in the study were representative of GPs in Australia, at least in terms of age,[12] sex,[12] hours per week in general practice,[12] and practice location.[13]

Implications for clinical practice

The development of guidelines and policies (for example, zero tolerance policies) could be one way that practices address occupational violence and aggression. Another way could be to encourage GPs to attend training that raises their awareness about the risks of violence and aggression, and enhances violence and aggression prevention knowledge. Improving GPs' ability to recognise the early warning signs of aggressive behaviour, and aggression defusion skills[14] is an important aspect of any training. The impact of violence and aggression experienced can be managed by promoting the use of relaxation techniques, use of social support networks (including management support), debriefing, or counselling for GPs.

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Ethics committee

Granted by the Monash University Standing Committee for Ethics in Research on Humans

Competing interests

The authors stated that there are none

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